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them in boxes, which were stored away in the Asylum. He also filed with the County Clerk a section and record of the work.

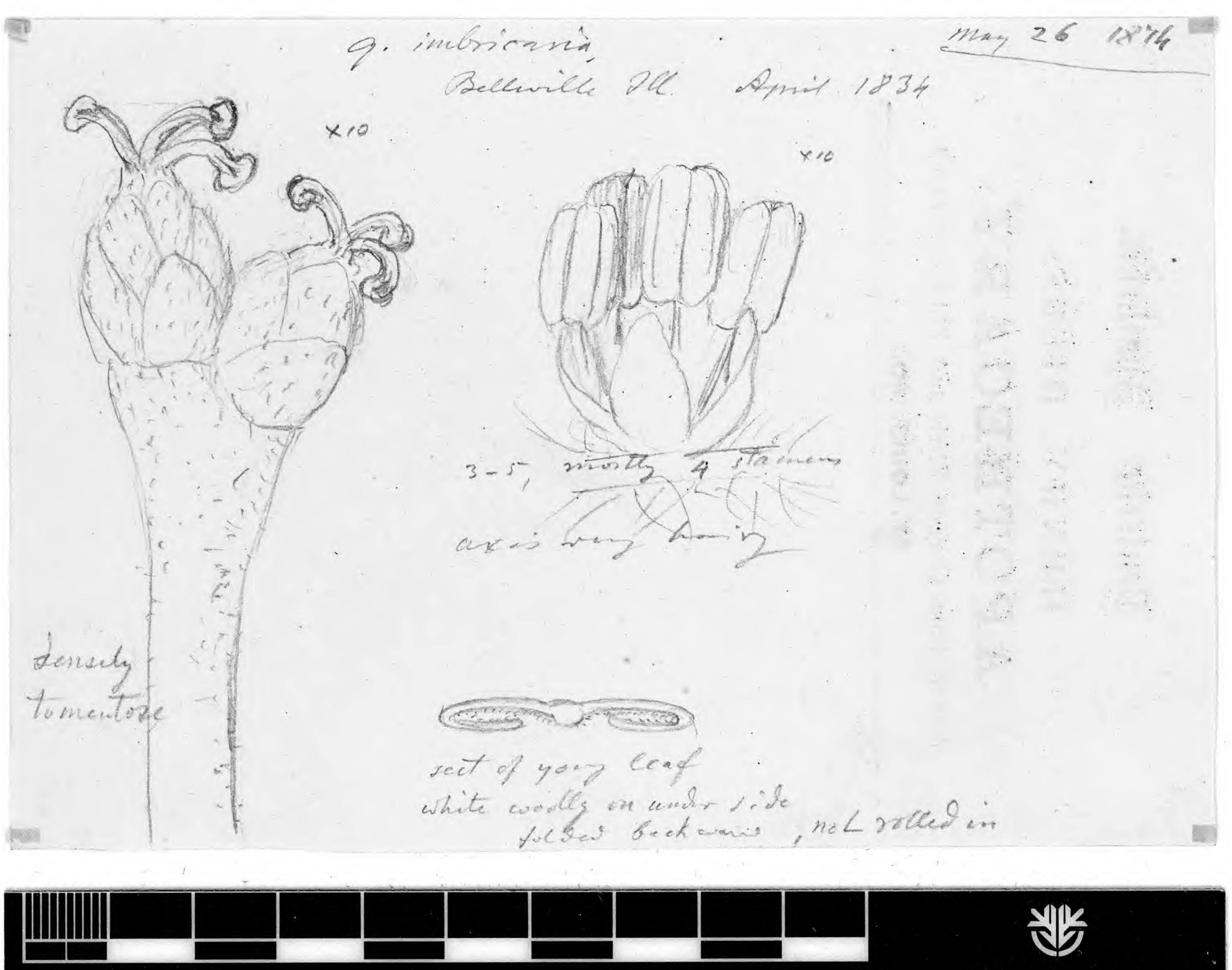
Through the kindness of Dr. Hazard, Superintendent of the Asylum, I obtained a complete suit of these specimens, and from an examination of them I have made out the following Section, which differs but little from that of Mr. Atkinson:

## SECTION OF BORING.

NO.	DESCRIPTION OF MATERIAL PASSED THROUGH.	Total Depth below urface.
II. \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Clay	49 57 61 66

1 13		Coai	* *
		Light-blue Clay	120
V. 15	139	Hard cherty Limestone, blue, drab, and gray;	
		some of it cherty, the upper part fine-grained,	
		the lower coarse, to	259
VI. 16	3	Blue Shales	
		Drab and gray Limestone, generally hard and	
	- 1 -	cherty, but a portion of it is free from chert.—It	
		is drab in color to	
		" then dark ash-colored at	
VII.		" " drab " to	
		" " grayish and light drab to	
		" " cherty at	
		and is of a dark color to	
TITTI -0	6-		0.00
V 111. 10	02	Dark-drab Limestone	500
11. 19		The recorded Section reports white Limestone	
~ ~		alternating with Shales from 438 to	
		Hard blue cherty Limestone	
XT S	112	Very hard Chert at	682
21.	75	Very hard Chert at	703
		Buff and drab cherty Limestone at	703
XII. 22	6	Sandstone, very fine-grained, to	709
		Chert and Limestone at	721
XIII. ?		Mostly light-gray or drab Limestone to	732
25		Mostly light-gray or drab Limestone to	790
XIV. 26	10	Red Limestone from 790 to	800
		Light-drab and gray Limestone with some Chert	
	00	from 800 to	835

NO.	Feet in Thickn.				
XVI. \( \frac{28}{29} \)	5 43	Argillaceous Limestone to Limestone with some Chert; upper part light-gray, the lower of a still lighter color	840		
VXXXXX (30	67	gray, the lower of a still lighter color	950		
AV11. 3 31	16	Dark Clay	966		
XVIII. 32	56	Blue Clay alternating with thin Limestone layers Blue and drab Limestone, with probably some	1022		
		Magnesian layers at 1139 ft., to	1216		
XIX. \ 35		Light-blue cherty Limestone, with salt water at extending to	1220		
26	27	Light-colored Limestone from 1225 to			
		Dark Limestone to			
		Light-drab cherty Limestone to			
		Yellowish-gray Limestone to			
XXI ) 11	78	Dark Limestone from 1402 to	1448.		
		Light-colored Limestone			
XXII. 43	133	Mostly pure white Sandstone, the upper portion soft and consisting of pure, clear and rounded			
		grains, and contains sulphurous water. The			
		lower portion is somewhat brown. Extends			
		from 1452 ft. to			
(1)	61	Buff-brown and drab-cherty Limestone to	1646		
XXIII )	67	Buff and brown Magnesian Limestone, some of			
7777111.) 43	)	it cherty, to	1713		
XXIV 16	280	Buff and drab cherty Magnesian Limestone, to	2102		
(1)	1 82	Hard and mostly pure Sandstone, with some			
XXV.		Limestone beds with Chert, buff and brown or reddish-gray, to			
XXVI.	487	Limestone and Chert—colors buff, drab, and			
		gray. The Chert beds include probably one-half the entire series from 2184 to			
XXVII. 49	172	No Chert from 2671 to 2735. Sand often abundant to			
XXVIII. 50	37	Mostly Sandstone with a little Lime in the upper part to			
XXIX. 51	1142	Limestone, mostly free from Chert and Sand. to	3022		
XXX. 52	08	Sandstone, upper portion dirty, middle blue, and			
)	,	the lower part is reddish-gray with a blue tinge	3120		
XXXI. 5	3 13	Dark Magnesian Slate to	3133		
XXXII. 52	1371	Yellowish-drab or gray Magnesian Limestone, hard, and contains but little Sand. The lower			
		66 ft. is thin-bedded dirty-reddish-gray, with	2504		
XXXIII. 5	5 41	Mostly hard thin-bedded Sandstone, dark olive-			
		gray in color—under the magnifying-glass it seems to be formed of white and black grains—			
VVVIII	6	to	3545		
XXXXV. 5	$7 5\frac{1}{2}28$	Sand and Limestone to	3550		
		mostly Granite—the lower 40 ft. is a hard red rock, and is certainly powdered Granite, for			
		some of the grains are red Quartz or Feld-			
		spar—to	3843.		
			0 13		



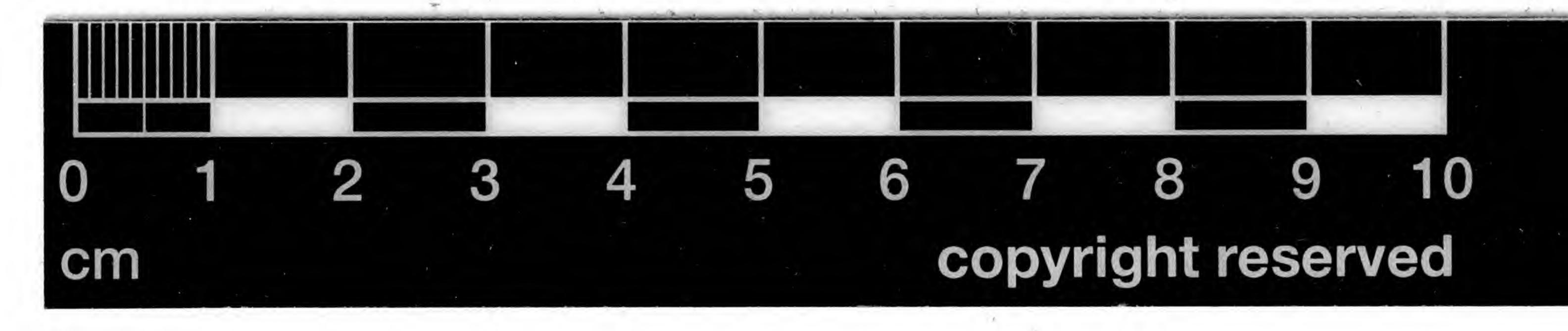


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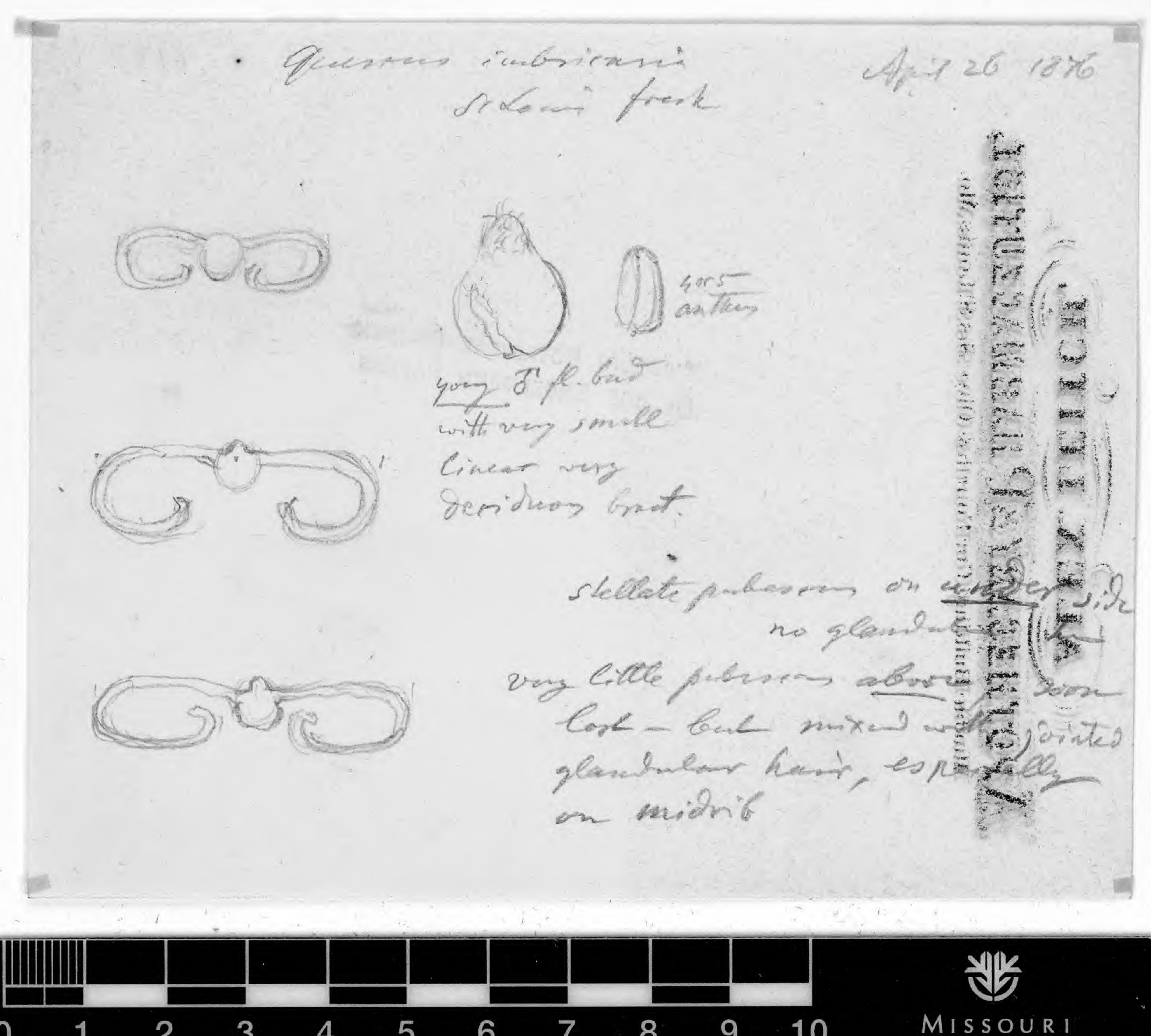
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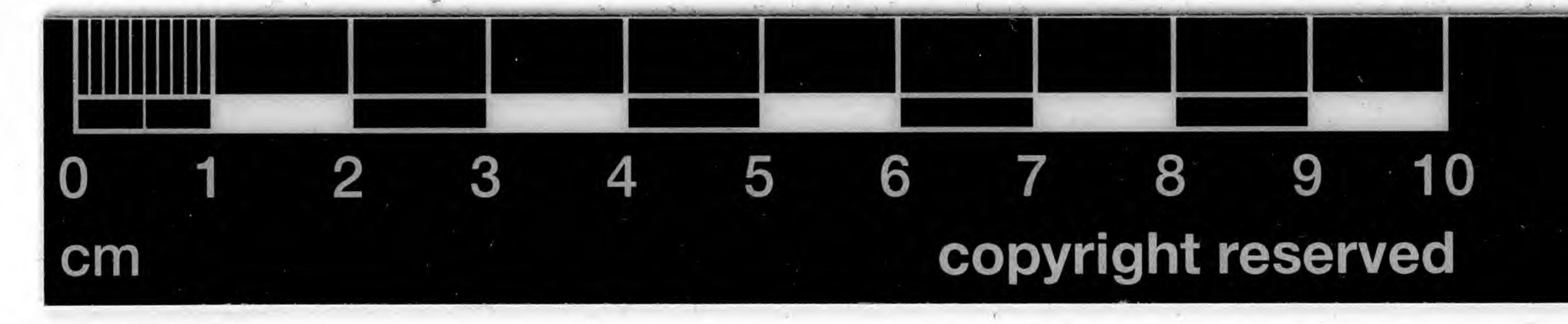




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irregular way, crossing from side to side, the two indentations of the down-strokes of the pen, but it will accompany irregularly the hair-lines. I speak of this latter peculiarity with some doubt, as the instrument I use is not the best which science now has at its command for this purpose, though competent under perfect conditions."

He paused, and then the forged signature appeared upon the wall. There was a universal burst of admiration, and then all grew still,—as if those who had given way to their feeling were suddenly stricken with the consciousness that they were witnessing a drama in which divine forces were playing a part. There were the ragged, jagged edges of the letters; there was the supplementary line, traceable in every part of them. There was man's lie-revealed, defined, convicted by God's truth!

The letters lingered, and the room seemed almost sensibly to sink in the awful silence. Then the stillness was broken by a deep voice. What lips it came from no one knew, for all the borders of the room were as dark as night. It seemed, as it echoed from side to side, to come from every part of the house: "Mene, mene, tekel, upharsin!" Such was the effect of these words upon the eager and excited, yet thoroughly solemnized seemed to be a nasal hemorrhage that called crowd, that when the shutters were thrown open, they would hardly have been surprised to see the bar covered with golden goblets and bowls of wassail, surrounded by lordly revelers and half-nude women, with the stricken Belshazzar at the head of the feast. Certainly Belshazzar, on his night of doom, could hardly have presented a more pitiful front than Robert Belcher, as all eyes were turned upon him. His face was haggard, his chin had dropped upon his breast, and he reclined in his chair like one on whom the plague had laid its withering hand.

There stood Professor Timms in his triumph. His experiment had proved to be a brilliant success, and that was all he cared tor.

"You have not shown us the other signatures," said Mr. Balfour.

"False in one thing, false in all," responded the Professor, shrugging his shoulders. "I can show you the others; they would be like this; you would throw away your time."

Mr. Cavendish did not look at the witness, but pretended to write.

"Does the counsel for the defense wish to question the witness?" inquired Mr. Balfour, turning to him.

"No," very sharply.

"You can step down," said Mr. Balfour. As the witness passed him, he quietly grasped his hand and thanked him. A poorly suppressed cheer ran around the court-room as he resumed his seat. Jim Fenton, who had never before witnessed an experiment like that which, in the Professor's hands, had been so successful, was anxious to make some personal demonstration of his admiration. Restrained from this by his surroundings, he leaned over and whispered:

"Professor, you've did a big thing, but it's the fust time I ever knowed any good to come from peekin' through a key-hole."

"Thank you," and the Professor nodded sidewise, evidently desirous of shutting Jim off; but the latter wanted further conversation.

"Was it you that said it was mean to tickle yer parson?" inquired Jim.

"What?" said the astonished Professor,

looking round in spite of himself.

"Didn't you say it was mean to tickle yer parson? It sounded more like a furriner," said Jim.

When the Professor realized the meaning that had been attached by Jim to the "original Hebrew," he was taken with what for his immediate retirement from the courtroom.

What was to be done next? All eyes were turned upon the counsel, who were in earnest conversation. Too evidently the defense had broken down utterly. Mr. Cavendish was angry, and Mr. Belcher sat beside him like a man who expected every moment to be smitten in the face, and who would not be able to resent the blow.

"May it please the Court," said Mr. Cavendish, "it is impossible, of course, for counsel to know what impression this testimony has made upon the Court and the jury. Dr. Barhydt, after a lapse of years, and dealings with thousands of patients, comes here and testifies to an occurrence which my client's testimony makes impossible; a sneak discovers a letter which may have been written on the third or the fifth of May, 1860—it is very easy to make a mistake in the figure, and this stolen letter, never legitimately delivered—possibly never intended to be delivered under any circumstances—is produced here in evidence; and, to crown all, we have had the spectacular drama in a single act by a man who has appealed to the imaginations of us all, and who, by his skill in the management of an

iar, has found it easy to make a falsehood | could hardly be ashamed. appear like the truth. The counsel for the plaintiff has been pleased to consider the establishment or the breaking down of the assignment as the practical question at issue. I cannot so regard it. The question is, whether my client is to be deprived of the fruits of long years of enterprise, economy, and industry; for it is to be remembered that, by the plaintiff's own showing, the defendant was a rich man when he first knew him. I deny the profits from the use of the plaintiff's patented inventions, and call upon him to prove them. I not only call upon him to prove them, but I defy him to prove them.' It will take something more than superannuated doctors, stolen letters, and the performances of a mountebank to do this."

This speech, delivered with a sort of frenzied bravado, had a wonderful effect upon Mr. Belcher. He straightened in his chair, and assumed his old air of self-assurance. He could sympathize in any game of "bluff," and when it came down to a square fight for money his old self came back to him. During the little speech of Mr. Cavendish, Mr. Balfour was writing, and when the former sat down, the latter rose, and, addressing the Court, said:

"I hold in my hand a written notice, calling upon the defendant's counsel to produce in court a little book in the possession of his client, entitled, 'Records of profits and investments of profits from manufactures under the Benedict patents,' and I

hereby serve it upon him."

Thus saying, he handed the letter to Mr. Cavendish, who received and read it.

Mr. Cavendish consulted his client, and then rose and said:

such book in existence."

"I happen to know," rejoined Mr. Balfour, "that there is such a book in existence, unless it has recently been destroyed. This I stand ready to prove by the testimony of Helen Dillingham, the sister of the plaintiff."

"The witness can be called," said the

Tudge.

Mrs. Dillingham looked paler than on the day before, as she voluntarily lifted her vail and advanced to the stand. She had dreaded the revelation of her own treachery toward the treacherous proprietor, but she had sat and heard him perjure himself, until her own act, which had been performed on ham?"

experiment with which none of us are famil- | behalf of justice, became one of which she

"Mrs. Dillingham," said Mr. Balfour, "have you been on friendly terms with the defendant in this case?"

"I have, sir," she answered. "He has been a frequent visitor at my house, and I have visited his family at his own."

"Was he aware that the plaintiff was your brother?"

"He was not."

"Has he, from the first, made a confidant of you?"

"In some things—yes."

"Do you know Harry Benedict—the plaintiff's son?"

"I do, sir."

"How long have you known him?"

"I made his acquaintance soon after he came to reside with you, sir, in the city."

"Did you seek his acquaintance?"

"I did, sir."

"From what motive?"

"Mr Belcher wished me to do it, in order to ascertain of him whether his father were living or dead."

"You did not then know that the lad

was your nephew?"

"I did not, sir."

"Have you ever told Mr. Belcher that your brother was alive?"

"I told him that Paul Benedict was alive, at the last interview but one that I ever had with him."

"Did he give you at this interview any reason for his great anxiety to ascertain the facts as to Mr. Benedict's life or death?"

"He did, sir."

"Was there any special occasion for the

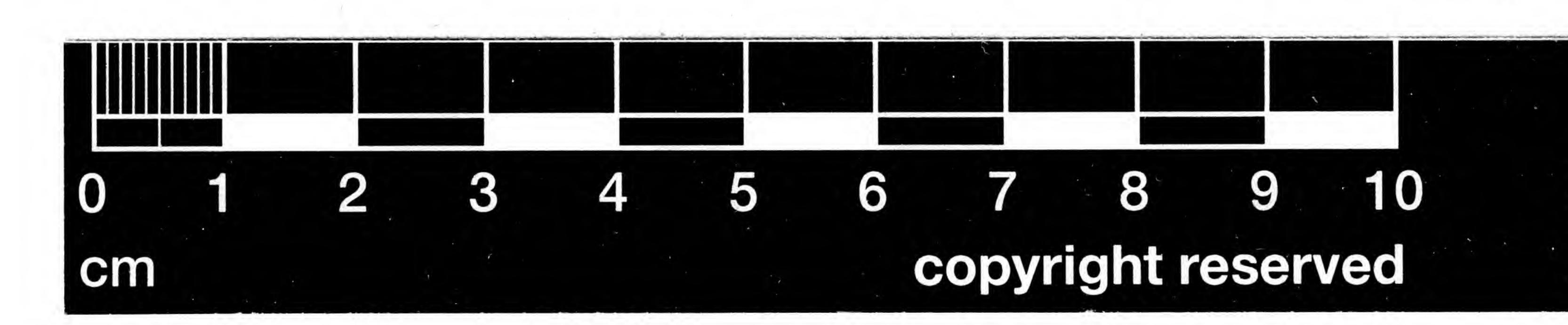
visit you allude to?"

"I think there was, sir. He had just lost heavily in International Mail, and evi-"May it please the Court, there is no dently came in to talk about business. At any rate, he did talk about it as he had never done before."

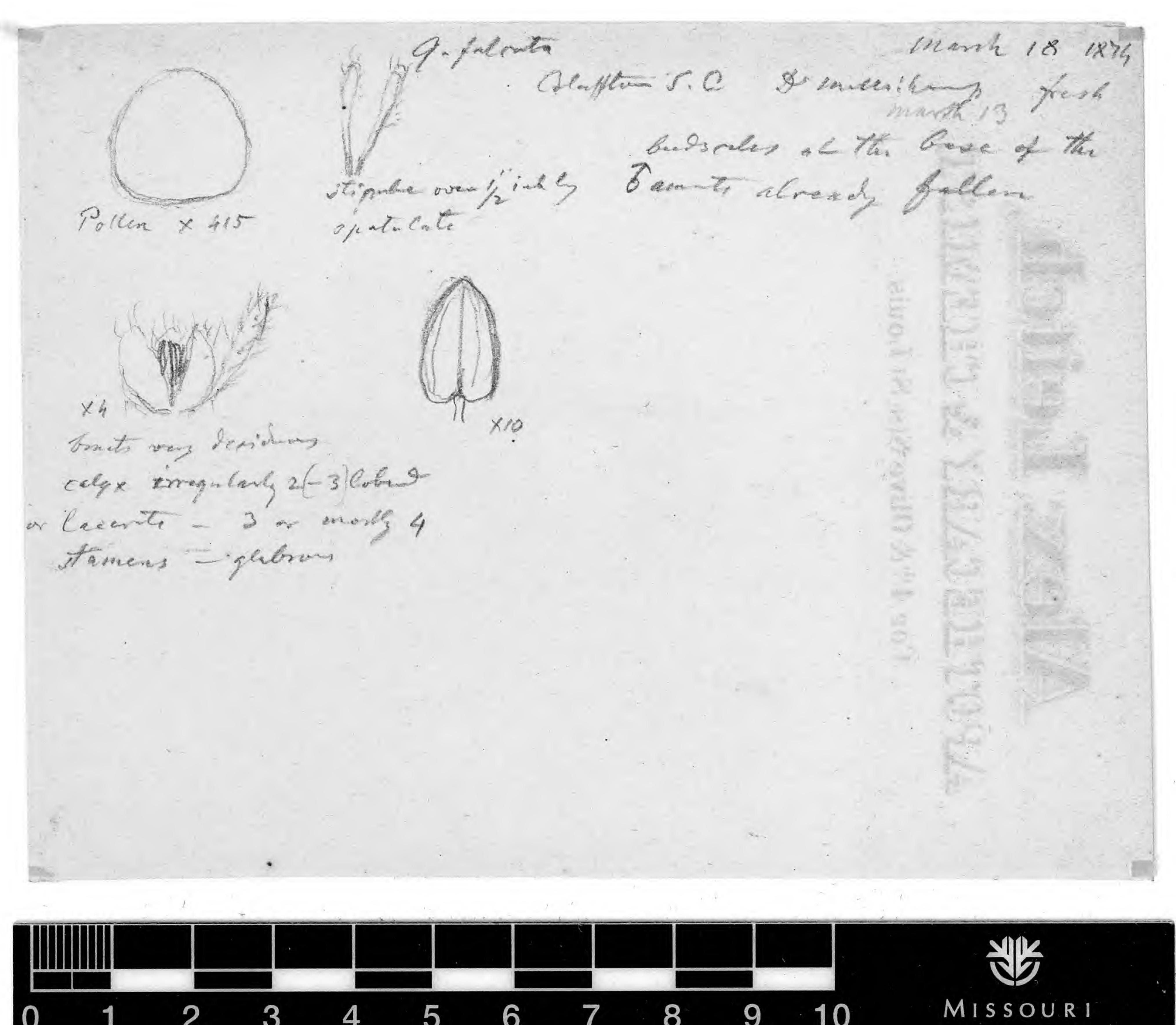
"Can you give us the drift or substance of his conversation and statements?"

"Well, sir, he assured me that he had not been shaken by his losses—said that he kept his manufacturing business entirely separate from his speculations, gave me a history of the manner in which my brother's inventions had come into his hands, and, finally, showed me a little account-book, in which he had recorded his profits from manufactures under what he called the Benedict Patents."

"Did you read this book, Mrs. Dilling-



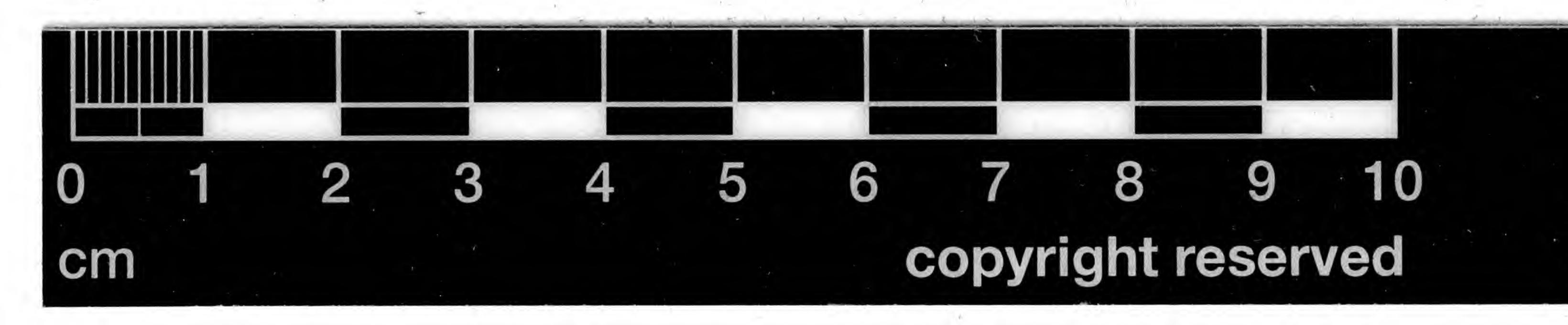




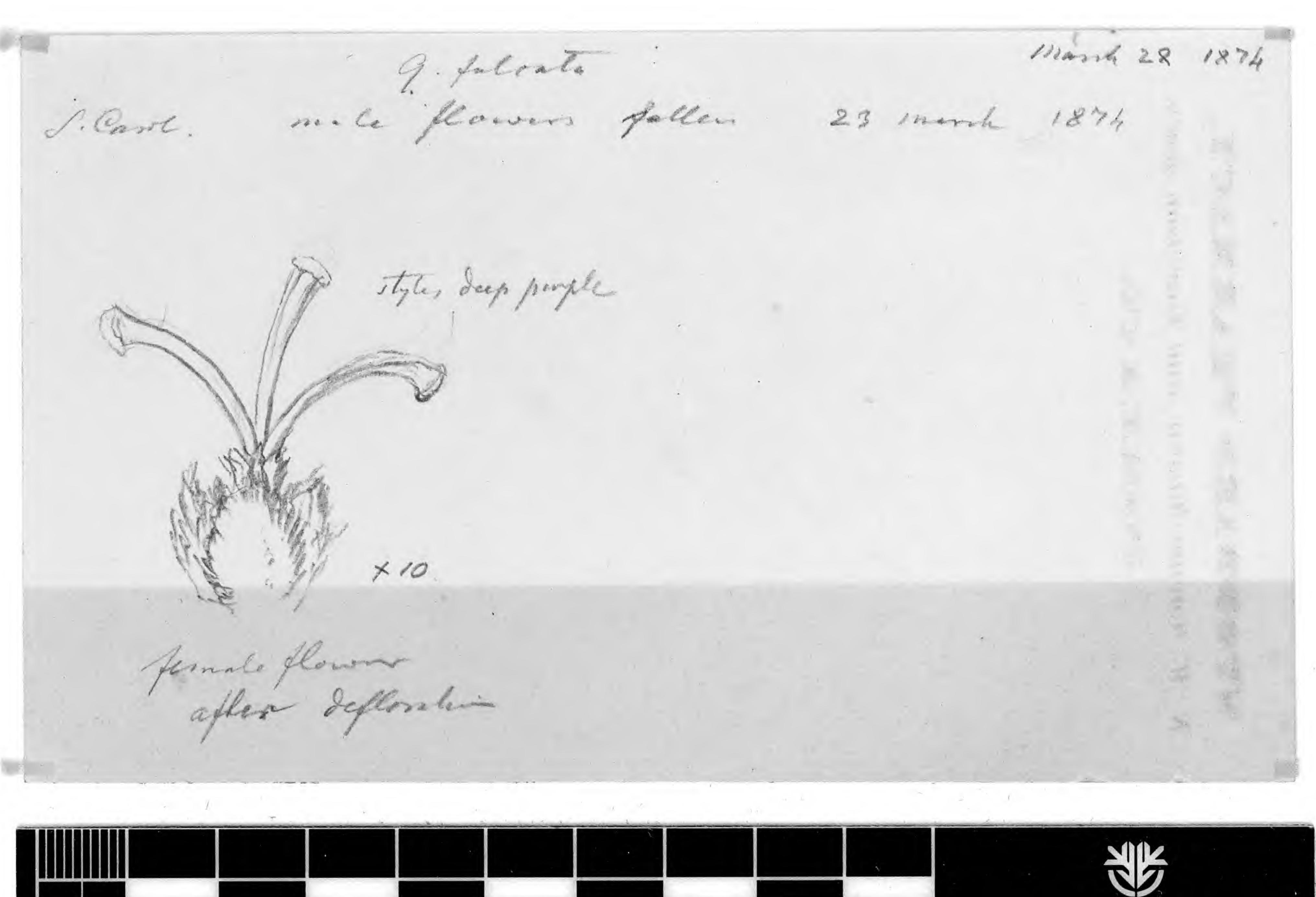
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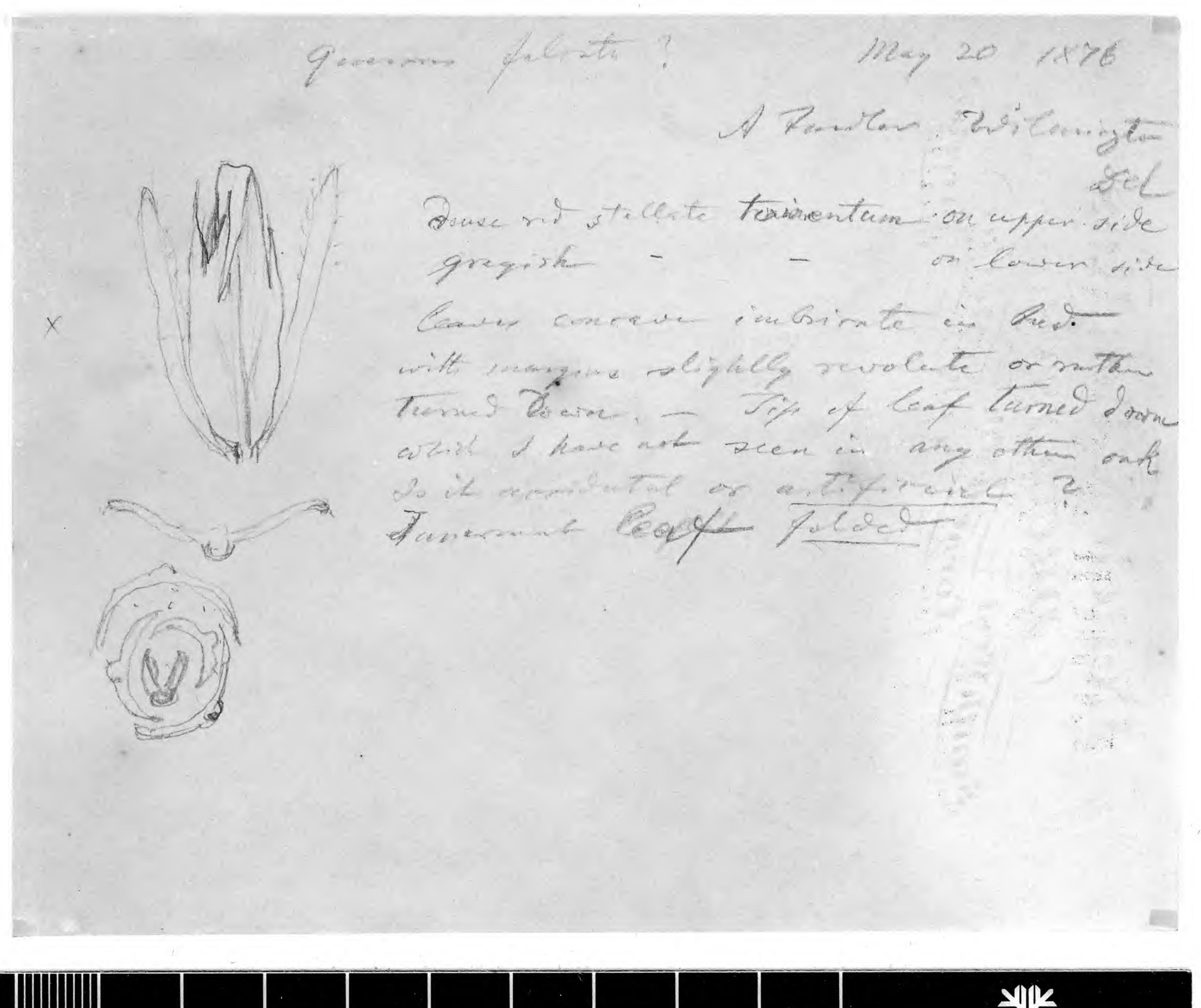






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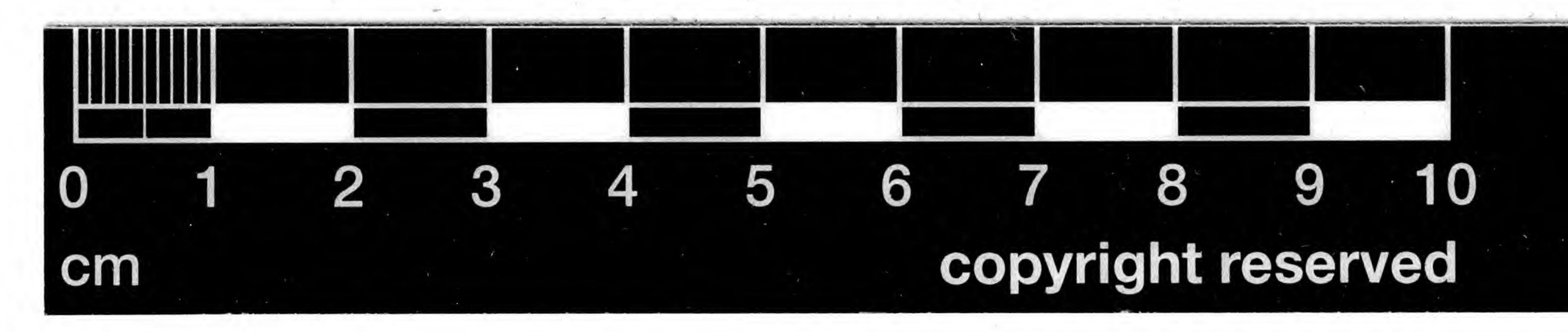


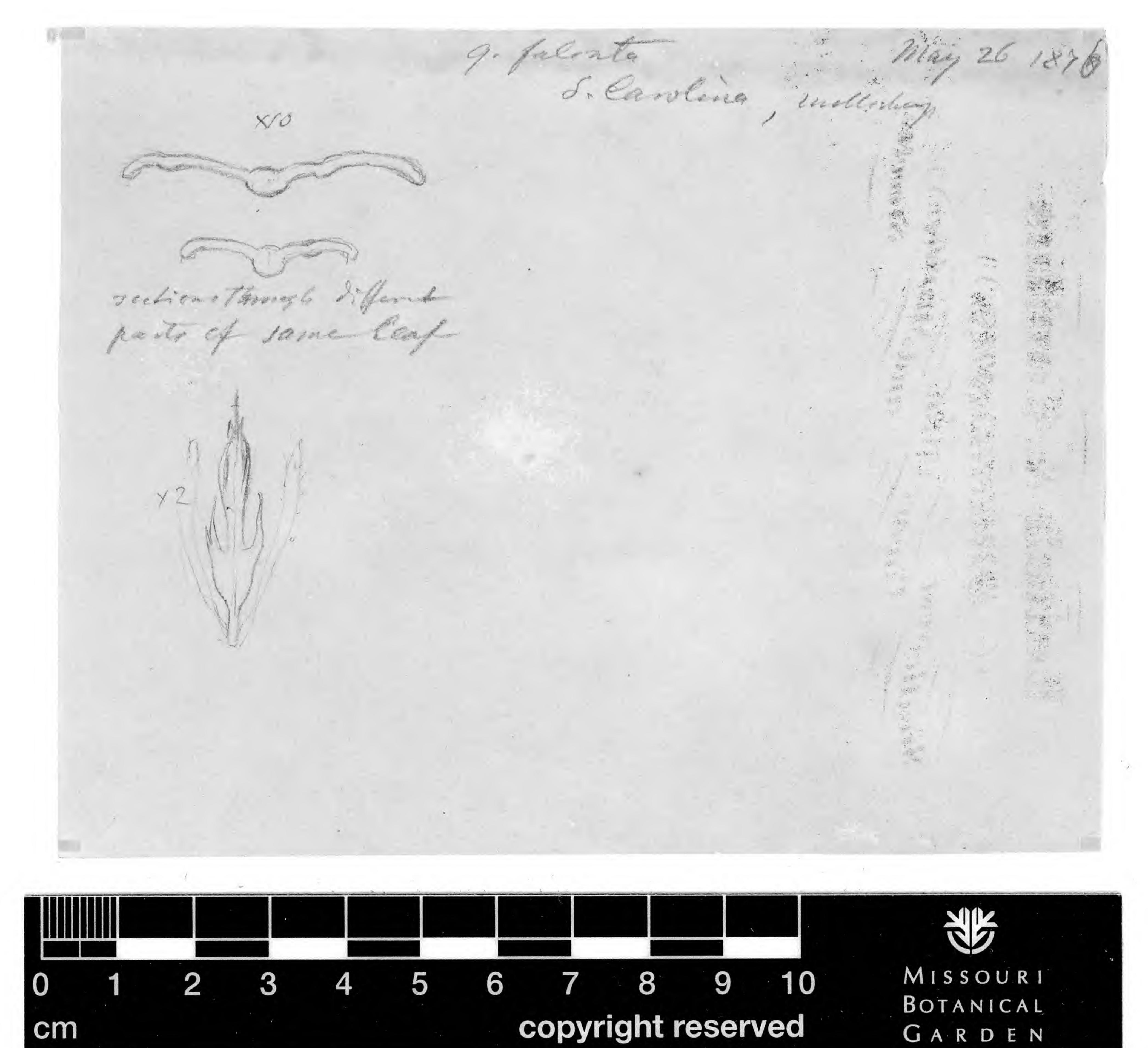






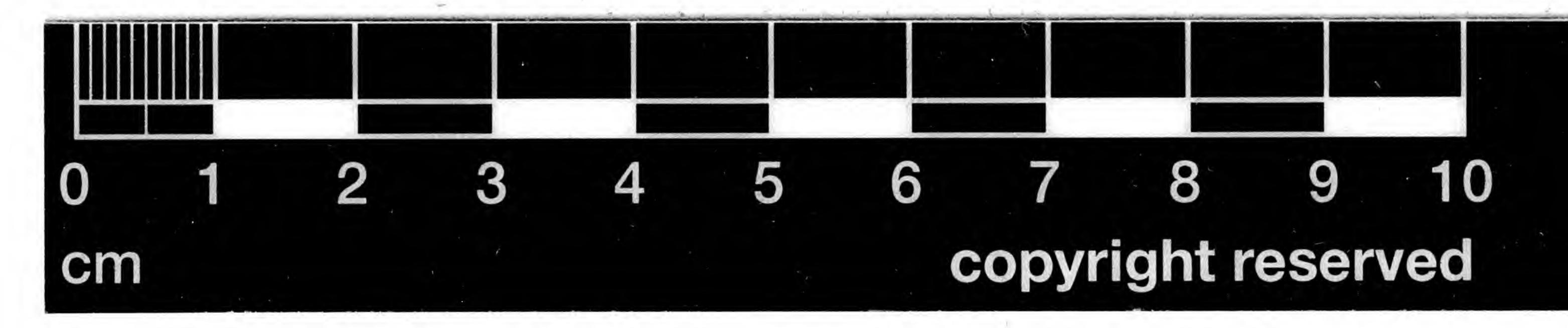
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## ABSTRACT OF THE RECORDS.

The borings indicate 63 ft. of Clay,
6 "Coal,
360 "Shale,
2725 "Limestone,
435 "Sandstone.

When the borings began, the water in the well stood at 40 ft. below the surface; at 134 ft. an 8 or 10 inch opening was struck, and the water sank in the well to a depth of 128 ft. Salt water was obtained at 1220 ft. At 1225 and 1262 ft. from the surface a strong petroleum smell was recognized. Sulphur water was reached at 2140 ft. At 2256 the water in the sand-pump indicated three per cent. of Salt; at 2957, four and a half per cent.; at 3293, two per cent.; at 3367, less than two per cent.; at 3384 ft. three per cent.; and below 3545, seven to eight per cent.

## TEMPERATURE.

Experiments with a Fahrenheit registering thermometer indicated the following:

At the	depth of	3127	ft.	the therr	nom	eter	indicated	106°.
66	66	3129	66	6	6		66	107°.
4.6	*	3264		6	6		. 6	106°.
66	66	3376	66	4	6		66	106°.
6.6	66	3473	66	6	6	4	6.6	105°.
66	66	3533	66	6	6		66	105°.
66	6.6	3604	66	6	6		6.6	105°.
. 66	6.6	3641	66	6	6	*	. 66	$104^{\frac{1}{2}^{\circ}}$ .
. 66	66	3728	66	6	6		66	$105\frac{1}{2}^{\circ}$ .
66	66	-	66.	6	6		-66	105°.
66	6.6	0	66	.6	6		6.6	105°.

It is to be regretted that no tests of temperature were made above these indicated depths.

In boring to the depth of 833 ft. the drill was often observed to be highly magnetized, but after passing that depth no further influence was observed.

## TUBING.

A cast iron tube of 11½ inches was first put down, reaching from the top to the limestone in the bottom of the well. The tube was then lined with wooden tubing, reducing the diameter

CEORGE ENGELMANN PAPERS MISSOURI BOTANICE FORM to 4½ inches. A 4½-inch drill was then put down, and boring

commenced March 31, 1866, continuing night and day for 3 yrs.

5 mos. and 10 days, every day except Sunday, until August 9,

1869, when work was stopped at a depth of 3843 feet 6 inches. From the 9th of July, 1866, to the 28th of January, 1867, was occupied in enlarging the bore. It was enlarged to 11½ inches to a depth of 1131 ft., and a short iron tube put down. The bore below was enlarged to 6 and afterwards to 10 inches, to 953 ft. depth. A sheet-iron tube, 79 ft. long, was then put down, resting on an offset at the bottom of the 10-inch bore. The 4-inch bore was then enlarged to 6 inches to a depth of 1022 ft., and a 5-inch wrought iron tube, weighing over 6 tons, put down, reaching from the top to the offset at the bottom of the 6-inch bore. The 4½-inch bore was continued downwards to the depth of 3843 feet 6 inches without need of further tubing.

Two wooden plugs with iron screws at the end were driven in, one at the 1022-ft. offset, the other at the 953-ft. offset, in order to separate the fresh from the salt water. If these were withdrawn, the well would be clear from the top to the bottom. The 5-inch tube, reaching to 1022 ft., has been withdrawn, and a pump put down to 400 ft. This pump was worked a few days, the water

On the 10th of April the jars broke in the well, and all broken parts were taken out the same day from a depth of 227 feet. About this time soft clay fell from the upper portion of the bore, when reaming to 6 inches was begun. On the 23d of the same month, 53 ft. of 5-inch tubing was put in and boring resumed. On the 19th of June, the jars broke at a depth of 841 ft., and four days were occupied in getting them and their broken parts out. On the 14th of November, 1867, the rope attached to the sand-pump parted, leaving the pump and most of the rope in the well, but it was taken out in five days. On the 14th of May, 1867, at the depth of 1876 ft., the jars broke, and two and a half days were consumed in taking out the broken parts and making repairs. At 2140 ft. a hard flinty opening was struck which caused the drill to deviate from a direct course, and it was with difficulty that the place was passed. On September 6th, at 2354 ft., the

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